AMENDMENT TO THE CLAIMS:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Currently Amended) ~~The method of claim 1, wherein said step (E) of re-adjusting said sub_id#1 network frequency further includes the steps of:~~

A method of plesiochronous synchronization of an integer N plurality of subscriber networks to a hub network, each said subscriber network including a sub's clock; said hub network including a hub's clock; said method comprising the steps of:

(A) broadcasting a plurality of control data from said hub network to each said sub network;

(B) transmitting back to said hub network a first sub's network ID number (sub_id#1) in a first separate channel (channel#1) and waiting for hub's instructions to burst back;

(C) bursting a set of data from said hub network to said first sub network having said sub_id#1;

(D) acquiring a hub frequency by said first sub network having said sub_id#1 and locking a sub_id#1 frequency on to said hub frequency;

(E1) substantially continuously measuring a short term hub's frequency error accumulated within a single burst by using a short term phase error loop filter of said sub_id#1 network;

(E2) substantially continuously estimating a long term hub's frequency

error accumulated within at least two bursts by using a long term frequency estimator of said sub_id#1 network;

(E3) substantially continuously generating a correction command by using said symbol loop filter of said sub_id#1 network;

(E4) substantially continuously digitally re-sampling a sample rate of said sub_id#1 network based on said correction command by using said sub_id#1 network sampling block; ~~and~~

(E5) repeating said steps (E1-E4) for a plurality of bursts;

and

(F) repeating said steps (B-E5) for each said 'i-th' sub's network having an 'i-th' sub's network ID number (sub_id#i); wherein integer 'i' is greater than one and less or equal to N.

5. (Original) The method of claim 4, wherein said step (E1) of substantially continuously measuring said short term hub's frequency error further includes the steps of:

(E1,1) using a 2-nd order error loop filter to measure and to output said short term hub's frequency error accumulated within a single burst;

and

(E1,2) using a short term error multiplexer to select between said short term hub's frequency error accumulated within said single burst and a zero signal output in between at least two consecutive bursts.

6. (Original) The method of claim 5, wherein said step (E1,1) of using said 2-nd order error loop filter to measure and to output said short term hub's frequency

error accumulated within said single burst further includes the steps of:

using a frequency accumulator to generate an integrated frequency error signal accumulated within said single burst;

using a phase error detector to generate a phase error signal within said single burst for each said sampling instant;

and

using an adder to sum said phase error signal generated within said single burst and said integrated frequency error signal accumulated within said single burst and to output said short term hub's phase error signal within said single burst for each said sampling instant.

7. (Original) The method of claim 4, wherein said step (E2) of substantially continuously estimating said long term hub's frequency error accumulated within at least two bursts by using said long term frequency estimator of said sub_id#1 network further includes the steps of:

(E2,1) initializing a total phase error register;

(E2,2) substantially continuously estimating a long term frequency error accumulated within at least two consecutive bursts;

(E2,3) if said long term frequency error estimate accumulated within said at least two consecutive bursts is greater than a predetermined threshold, outputting said long term frequency error estimate accumulated within said at least two consecutive bursts;

and

(E2,4) if said long term frequency error estimate accumulated within said at least two consecutive bursts is less than or equal to said predetermined

threshold, outputting a zero long term phase error signal.

8. (Original) The method of claim 7, wherein said step (E2,2) of substantially continuously estimating said long term frequency error accumulated within at least two consecutive bursts further includes the step of:

using a linear regression operation on a plurality of symbols within at least said two consecutive bursts.

9. (Original) The method of claim 7, wherein said step (E2,2) of substantially continuously estimating said long term frequency error accumulated within at least two consecutive bursts further includes the step of:

using a moving average operation on a plurality of symbols within at least said two consecutive bursts.

10. (Original) The method of claim 7, wherein said step (E2,2) of substantially continuously estimating said long term frequency error accumulated within at least two consecutive bursts further includes the step of:

using an exponential average operation on a plurality of symbols within at least said two consecutive bursts.

11. (Original) The method of claim 4, wherein said step (E3) of substantially continuously generating said correction command further includes the step of:

adding short term frequency error signal accumulated within said single burst and said long term frequency error accumulated within at least two consecutive bursts to generate a total phase error correction command;

wherein said total phase error correction command is used for advancing or delaying a sample timing of a modem front end used to recover data from each said incoming from said hub burst signal having maximum/minimum.

12. (Currently Amended) In a subscriber network (sub) including a sub's clock, an apparatus for plesiochronous synchronization of said sub to a hub network; said hub network including a hub's clock, said apparatus comprising a symbol loop filter and a re-sampler; said symbol loop filter further comprising:

a short term phase error loop filter configured to substantially continuously measure a short term frequency error accumulated within a single burst;

a long term frequency estimator configured to substantially continuously estimate a long term frequency error accumulated within at least two bursts;

and

a total phase error phase register configured to substantially continuously generate a total phase correction command; wherein said total phase correction command is used for advancing or delaying a sample timing of a modem front end used to recover data from each said incoming from said hub burst signal having maximum/minimum amplitude.

13. (Original) The apparatus of claim 12, wherein said short term phase error loop filter further comprises:

a 2-nd order error loop filter configured to measure and to output said short term phase error accumulated within a single burst;

and

a short term error multiplexer configured to select between said short term frequency error accumulated within said single burst and a zero signal output in between at least two consecutive bursts.

14. (Original) The apparatus of claim 13, wherein said 2-nd order error loop filter further comprises:

a frequency accumulator configured to generate an integrated frequency error signal accumulated within said single burst;

a phase error detector configured to generate a phase error signal within said single burst for each said sampling instant;

and

an adder configured to sum said phase error signal generated within said single burst and said integrated frequency error signal accumulated within said single burst and configured to output said short term hub's phase error signal within said single burst for each said sampling instant.

15. (Original) The apparatus of claim 12, wherein said long term frequency estimator further comprises:

a block configured to perform a linear regression operation on a plurality of symbols within at least said two consecutive bursts.

16. (Original) The apparatus of claim 12, wherein said long term frequency estimator further comprises:

a block configured to perform a moving average operation on a plurality of symbols within at least said two consecutive bursts.

17. (Original) The apparatus of claim 12, wherein said long term frequency estimator further comprises:

a block configured to perform an exponential average operation on a plurality of symbols within at least said two consecutive bursts.

18. (Currently Amended) In a subscriber network (sub) including a sub's clock, an apparatus for plesiochronous synchronization of said sub to a hub network; said hub network including a hub's clock, said apparatus comprising:

a means for measuring a short term frequency error accumulated within a single burst;

a means for estimating a long term frequency error accumulated within at least two bursts;

and

a means for generating a total phase correction command; wherein said total phase correction command is used for advancing or delaying a sample timing of a modem front end used to recover data from each said incoming from said hub burst signal having maximum/minimum amplitude.